

WHAT IS CLAIMED IS:

1. A spectroscope comprising:

an incidence member for introducing light to be measured;

5 a wavelength dispersion element for dispersing said light to be measured from said incidence member in accordance with its wavelengths;

 a collective optical system that collects said light to be measured having been dispersed by said wavelength dispersion element to form a spectral
10 image; and

 a detection element that detects said spectral image,

 wherein said wavelength dispersion element is
15 adapted to be rotatable, and a rotation mechanism that rotates said wavelength dispersion element in accordance with a change in environmental temperature is provided so as to cancel a drift of said spectral image in a wavelength dispersion direction caused by
20 a change in environmental temperature.

2. A spectroscope according to claim 1, wherein when a reflective grating is used as said wavelength dispersion element, a rotation amount $\Delta\alpha$ of said
25 wavelength dispersion element per 1°C temperature change is expressed by the following formula:

$$\Delta\alpha = \Delta s / f / (1 + \cos \alpha / \cos \beta),$$

where Δs is a drift amount of said spectral image per 1°C temperature change, f is the focal length of said collective optical system, α is the incidence angle of the light to be measured incident on said wavelength dispersion element, and β is the diffraction angle of diffracted light emergent from said wavelength dispersion element (the angles α and β being measured from a normal line of a grating surface of said wavelength dispersion element as a reference).

3. A spectroscope comprising:

an incidence member for introducing light to be measured;

15 a wavelength dispersion element for dispersing said light to be measured from said incidence member in accordance with its wavelengths;

a collective optical system that collects said light to be measured having been dispersed by said wavelength dispersion element to form a spectral image;

20 a detection element that detects said spectral image;

a first support member that supports said incidence member, said collective optical system and said detection element integrally;

a second support member that supports said

wavelength dispersion element, said second support member being made of a material different from said first support member; and

5 a transmission member that transmits a contraction/expansion amount of said first support member to said second support member when environmental temperature changes,

10 wherein said second support member includes a deformation member that elastically deforms, when environmental temperature changes, in accordance with a difference between the contraction/expansion amount of said first support member transmitted from said transmission member and a contraction/expansion amount of said second support member and a rotation member that rotates minutely in accordance with
15 elastic deformation of said deformation member, and

said wavelength dispersion element is mounted on said rotation member in such a way that its wavelength dispersion direction is oriented
20 perpendicular to the axial direction of said rotation member.

4. A spectroscope according to claim 3, wherein rotation angle and rotation direction of said
25 rotation member upon change in environmental temperature are arranged in advance so as to cancel a drift of said spectral image in the wavelength

dispersion direction.

5. A spectroscope according to claim 3 or 4,
 wherein said second support member comprises a V-
 5 shaped member in which two arm members are joined via
 said deformation member of a thin form, one of said
 two arm members constituting said rotation member,
 and said transmission member comprises a member that
 connects both end portions of said V-shaped member
 10 and said first support member and changes the angle
 formed by said two arm members in accordance with
 contraction/expansion of said first support member.

6. A spectroscope according to claim 5, wherein
 15 coefficient of linear expansion ρ_b of said first
 support member, coefficient of linear expansion ρ_m of
 said second support member, length y of one of said
 two arms, length z of the other of said two arms and
 angle a formed by said two arms satisfy the following
 20 formulas:

$$y/z = \{A \pm \sqrt{(A^2 - 4)}\} / 2$$

$$A = 2\cos a + \sin a \cdot \Delta a / (\rho_b - \rho_m),$$

where Δa is the rotation angle of said rotation
 member that can cancel a drift of said spectral image
 25 in the wavelength dispersion direction per 1°C
 environmental temperature change.